

Date: Thu, 14 Apr 94 04:30:36 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #97
To: Ham-Homebrew

Ham-Homebrew Digest Thu, 14 Apr 94 Volume 94 : Issue 97

Today's Topics:

Antique radio and gramophone restoration
Ctr Fed ZEP length? (3 msgs)
Definition of "ripple" in filters?
Directly plotting etch-resist on PC boards? (3 msgs)
Frequency Counter Circuit Mod
Green Card Lottery- Final One? (2 msgs)

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 12 Apr 94 08:13:12 CDT
From: ihnp4.ucsd.edu!agate!msuinfo!uchinews!cdsmail!timbuk.cray.com!
walter.cray.com!ned.cray.com!lindco2!jal@network.ucsd.edu
Subject: Antique radio and gramophone restoration
To: ham-homebrew@ucsd.edu

There are often threads on these subjects on rec.antiques. They often talked
about
splitting off, but haven't yet.

Hope this helps.

Jim Lindberg
jal@cray.com

Date: 13 Apr 94 13:07:22 GMT
From: agate!howland.reston.ans.net!cs.utexas.edu!swrinde!emory!wa4mei!ke4zv!
gary@ucbvax.berkeley.edu
Subject: Ctr Fed ZEP length?
To: ham-homebrew@ucsd.edu

In article <Co5wJD.L6I@wybbs.mi.org> pete@wybbs.mi.org (Pete Hoffswell) writes:
>What's the best length for a Center Fed Zepp antenna? I'd like it good
>for all Novice bands, especially 80M and 15M. I have one up now, but I think
>my length isn't right. It's cut like a 80M dipole now (I think).

80 meter 1/2-wave Zepps present a difficult impedance to match at 15 meters. An old rule of thumb flattop length for all the HF bands is 105 feet. That will present a feed impedance within the range of most good open wire balanced tuners on all bands.

If you're using an unbalanced tuner and a balun on the output, then all bets are off. That often doesn't give you a large enough (efficient) matching range for an all band flattop. Use a balanced tuner, and if you must, use a 1:1 balun on the *input* side of the tuner where it'll work efficiently. There are tuner topologies that do the unbalanced to balanced transform internally so you don't need a balun at all, but they're typically a bit more complex and require more unusual components such as swinging links. (These are actually great if you don't mind the mechanical challenges involved in building them.)

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Tue, 12 Apr 1994 19:52:23 GMT
From: pacbell.com!sgiblab!swrinde!cs.utexas.edu!howland.reston.ans.net!
usenet.ins.cwru.edu!eff!news.kei.com!yeshua.marcam.com!zip.eecs.umich.edu!
newsxfer.itd.umich.edu!news1.@@ihnp4.ucsd.edu
Subject: Ctr Fed ZEP length?
To: ham-homebrew@ucsd.edu

What's the best length for a Center Fed Zepp antenna? I'd like it good for all Novice bands, especially 80M and 15M. I have one up now, but I think my length isn't right. It's cut like a 80M dipole now (I think).
--

Pete Hoffswell N9SSA Internet: pete@wybbs.mi.org

Holland, Michigan 616-395-5551 Packet: n9ssa@wa8ure.#swmi.mi.usa.na
=====

Date: 14 Apr 94 05:37:42 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!noc.near.net!news.delphi.com!
usenet@ucbvax.berkeley.edu
Subject: Ctr Fed ZEP length?
To: ham-homebrew@ucsd.edu

Pete Hoffswell <pete@wybbs.mi.org> writes:

>What's the best length for a Center Fed Zepp antenna? I'd like it good
>for all Novice bands, especially 80M and 15M. I have one up now, but I think
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>--

>-----
>Pete Hoffswell N9SSA Internet: pete@wybbs.mi.org
>Holland, Michigan 616-395-5551 Packet: n9ssa@wa8ure.#swmi.mi.usa.na
>-----

Pete, the length really doesn't matter as long as your antenna tuner can give a conjugate match. 100-105 ft. is popular. My 88 ft. works just fine on 75m. It should be at least 3/8 wavelength on the lowest transmit freq.

73, KG7BK, CecilMoore@delphi.com

Date: Wed, 13 Apr 1994 11:04:19 GMT
From: agate!howland.reston.ans.net!cs.utexas.edu!csc.ti.com!tilde.csc.ti.com!
mksol!blair@ames.arpa
Subject: Definition of "ripple" in filters?
To: ham-homebrew@ucsd.edu

John Welch (jjw@seastar.org) wrote:

: What, precisely, is meant by 'ripple' in a filter? IE if I
: have a filter that, within the passband, the insertion loss varies
: from 2.6db to 1.1db, is this 1.5db of ripple, or .75db?

1.5 dB is right. The term "ripple" comes from the fact that an ideal chebyshev filter (one of the more popular designs) has an almost sinusoidal reponse in band.

: Also, then, how does one determine the -3db edges? Is that
: -3db from the average of high and low within the passband?

Generally from the peak in band point, though the definition is

not set in concrete for anything but butterworth type filters.

Art.

--

"Television is chewing gum for the eyes" - Frank Lloyd Wright
Dont forget to vote in news.announce.newsgroups !

Date: 13 Apr 94 13:13:58 GMT

From: agate!howland.reston.ans.net!cs.utexas.edu!swrinde!emory!wa4mei!ke4zv!
gary@ucbvax.berkeley.edu
Subject: Directly plotting etch-resist on PC boards?
To: ham-homebrew@ucsd.edu

In article <1994Apr11.165053.10134@newsgate.sps.mot.com> David DiCarlo
<r14793@waccvm.sps.mot.com> writes:

>
>In an earlier post, it was mentioned that ironing a laser print on a
>copier-usable transparency sheet would work as an etch mask.
>
>My question is, what iron temperature was used and was the transparency
>peeled
>off hot or cold? I used 1 sheet of paper between the iron and the
>transparency.

Use an iron set on "cotton", or it's highest setting whatever that's
called. I iron the transfers on with an old Tee shirt as a buffer.

Use a *lot* of pressure on the iron. Wait until it cools before peeling
off the film. The copper must be *very* clean for this to work well,
scrub with Comet before doing the transfer.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 13 Apr 94 13:10:02 GMT

From: agate!howland.reston.ans.net!news.ans.net!hp81.prod.aol.net!
search01.news.aol.com!not-for-mail@ucbvax.berkeley.edu
Subject: Directly plotting etch-resist on PC boards?
To: ham-homebrew@ucsd.edu

the best commonly available plastic to use in the laser printer would be the
kind that is designed to be run through copiers to make overhead projectoer

films. I have has some success with this. The Tech-2000 stuff didn't work at all.

73 de JimN0OCT

ENTROPY AINT WHAT IT USED TO BE!

Date: 13 Apr 94 19:36:37 GMT
From: sdd.hp.com!col.hp.com!srigenprp!alanb@hplabs.hp.com
Subject: Directly plotting etch-resist on PC boards?
To: ham-homebrew@ucsd.edu

David DiCarlo (r14793@waccvm.sps.mot.com) wrote:

: Well, I tried it this weekend by photocopying on to a sheet of
: transparency and ironing that onto the copper. ...

I'm surprised nobody mentioned the ready-made kit you can buy specifically intended for this application. It uses a specially-coated paper so that after you iron it onto the PC board the paper soaks off in a pan of water, leaving the toner behind as resist. You then etch the board in the normal way.

The pattern can be laid down on the paper using a photocopier or laser printer.

The only tricky part is that the board must be completely clean and scoured with fine steel wool. The steel wool seems to roughen the copper so the toner sticks better. Another trick is to soak the board with the paper side down. Otherwise, the paper can pull off some toner as the paper floats up.

: My question is, what iron temperature was used and was the transparency
: peeled off hot or cold? I used 1 sheet of paper between the iron and the
: transparency.

Seems like the hotter the better. I haven't had any trouble with toner smearing or widening of the traces.

I bought my kit (with 5 sheets of 8-1/2 x 11" paper) for \$12.95 from:

DC Electronics
POB 3203
Scottsdale, AZ 85257
800-467-7736

800-423-0070

AL N1AL

Date: 13 Apr 94 12:55:24 GMT
From: agate!howland.reston.ans.net!europa.eng.gtefsd.com!emory!wa4mei!ke4zv!
gary@ucbvax.berkeley.edu
Subject: Frequency Counter Circuit Mod
To: ham-homebrew@ucsd.edu

In article <".9-Apr-94..6:34:05.PDT".*.*.D.R._Shalita.ES_AE@Xerox.com>
David_Shalita.ES_AE@xerox.com writes:

>
>I would like to homebrew a circuit mod that inhibits freq display
>any time the input signal is below a minimum amplitude that
>I would select.

What you need is a Schmidt trigger circuit near the input stage, at least before the counter ICs, if after the prescaler. For a 600 MHz counter, that would be a 60 MHz Schmidt. If it has to be threshold adjustable, the easiest way is to implement it with discrete transistors. Any good VHF switching transistor should be fine for the job. Just set the bias threshold wherever you want readings to commence.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

Date: Wed, 13 Apr 1994 06:53:26 GMT
From: ihnp4.ucsd.edu!pacbell.com!sgiblab!swrindle!cs.utexas.edu!
howland.reston.ans.net!pipex!sunic!news.funet.fi!aton.abo.fi!
usenet@network.ucsd.edu
Subject: Green Card Lottery- Final One?
To: ham-homebrew@ucsd.edu

In <2odl7q\$48k@herald.indirect.com> nike@indirect.com writes:

> Green Card Lottery 1994 May Be The Last One!
> THE DEADLINE HAS BEEN ANNOUNCED.

(deleted)

> ****
> Canter & Siegel, Immigration Attorneys
> 3333 E Camelback Road, Ste 250, Phoenix AZ 85018 USA
> cslaw@indirect.com telephone (602)661-3911 Fax (602) 451-7617

Sorry for posting an article not related to ham radio as a hobby.. but it how many news groups have you seen this? So far I have seen it in all unmoderated groups... this beats all such previous "postings"... I have already sent an e-mail to those people... maybe you should do the same!

73 Mika OH1NZQ

Date: Wed, 13 Apr 1994 16:51:22 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!europa.eng.gtefsd.com!
library.ucla.edu!news.ucdavis.edu!csus.edu!netcom.com!netcom6!
faunt@network.ucsd.edu
Subject: Green Card Lottery- Final One?
To: ham-homebrew@ucsd.edu

It's been in lots of groups, it appears that his account on indirect has been disabled, but my suggestion is that someone in Arizona let the Bar Association know about this.

Date: Wed, 13 Apr 1994 12:19:17 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!europa.eng.gtefsd.com!ulowell!
wang!pvr@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <1994Apr9.153927.8548@vlsi.polymtl.ca>, <2oen8u\$mn1@acorn.acorn.co.uk>, <2oevd0\$m8g@apakabar.cc.columbia.edu>
Subject : Re: Directly plotting etch-resist on PC boards?

mac20@namaste.cc.columbia.edu (Michael A Cecere) writes:

>the name of the company for this Toner Transfer System is
>DynaArt Designs
>(805) 943-4746
>they have a real neat little catalog for the homebrew type.

>what sounds intriguing is how they say that the process of ironing
>the ink from the transfer onto the PCB anneals the gunk so that minor
>holes created by imprecise laser printing can get melted over. They
>also mention how one client used acetone I think to harden the surface
>of the ink for better etching and to fill in micro-holes.
>also they mention attaching a big chunk of aluminum to an iron to
>distribute the heat better and I feel to increase the iron's heat
>capacity so the PCB doesn't cool it down so quickly.
>there were other interesting tid-bits in the catalog also.

The problem with both of the toner transfer systems that I tried, transfer film and sugar paper, is that the traces mush outward as you iron them onto the copper. If your design has fairly close trace spacings then they will short. A device that applied a very even pressure at a precise temperature would probably work well but an iron is just too crude for good results.

A technique that I tried and got better results on small boards is to use ordinary copier paper. It does not have the problem with trace mush. Try this;

- * Iron your pattern onto the board with the iron temp. set to max.
- * Lift the iron off the board for a second. Put a paper towel saturated in water on the paper and put the iron down as fast as possible.
- * Iron the wet towel for a few seconds. Do not dry out the water, it should still be boiling when you are done.
- * Put the board with the paper still attached in a pan of water and leave for a few minutes until the paper is completely soaked.
- * Rub the paper with your fingers under water so as to disintegrate the paper.
- * Inspect the board for remaining paper between close traces. You can use a tooth brush or tooth pick to open up blocked areas.

You will notice that the toner is securely attached to the copper but has fibers from the paper still imbedded in its surface. This will not bother etching so long as they are not matted onto the copper.

The purpose of the wet towel is to drive steam into the paper causing the paper to expand. Without this step the paper contracts as it cools and pulls the toner off the copper.

Good luck, Pete.

--

-->>>>>> Peter Reilley pvr@wiis.wang.com KA1LAT <<<<<<<<
BEAV, the best binary file editor w/src. For info finger pvr@das.wang.com
Well, that about says it.

End of Ham-Homebrew Digest V94 #97
